THE NAVAL SAFETY CENTER'S AVIATION MAGAZINE

approach

April 1998

Goshawk Midair

Check-Flight Jitters

A Favorite E-2 Recipe: 100-Bird Puree

Flying with Dangerboy

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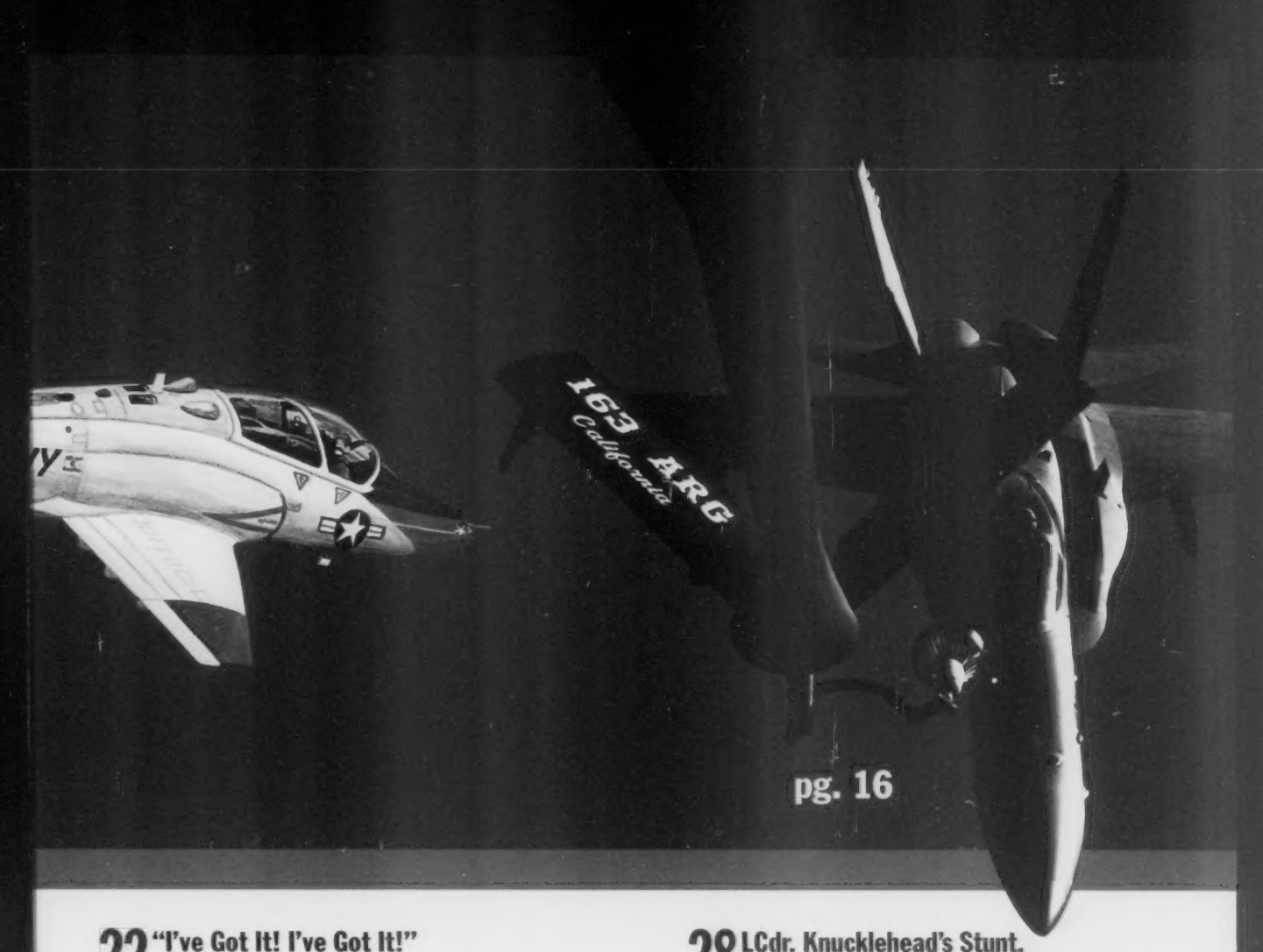

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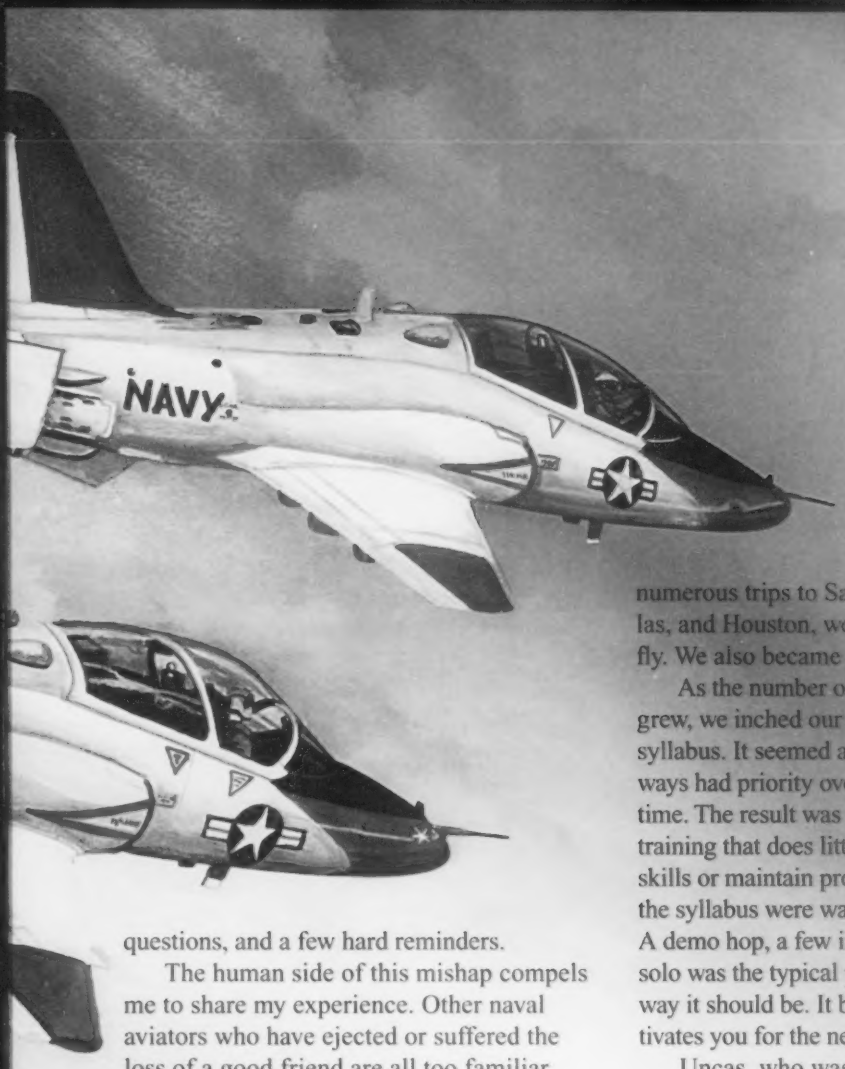
Goshawk Midair

by Lt. Shawn B. Inman

I THOUGHT ABOUT WRITING an *Approach* article about my T-45 midair for a long time. It was a catastrophic collision of two aircraft piloted by two student solos during a four-plane break-up and rendezvous practice. Like most of us, I rationalized my way out of writing by saying I was too busy, or that my situation had been a "no-brainer," and no one would really learn much from it. But after reflecting on all that happened I've changed my mind. A good friend and classmate of mine Brian (call sign "Uncas"), died. My life was spared by the ejection seat. What is left are memories of a great friend and talented pilot, some unanswered

In the paraloft, he told me he had flown 229 recently and wasn't happy about the slow spool-up time of that aircraft's engine...



questions, and a few hard reminders.

The human side of this mishap compels me to share my experience. Other naval aviators who have ejected or suffered the loss of a good friend are all too familiar with my feelings.

"Congratulations, Mr. Inman," my instructor told me, "you are going to Kingsville, Texas for jet training!" I was happy, but a bit nervous about what was to come. I reached Kingsville a few weeks later and soon discovered I was probably going to be in the T-45TS program—T-34 to T-45 and no Buckeye in between. My Pensacola roommate and several other guys I knew or had met were supposed to start one of the last T-2 classes in Kingsville. That got nixed a few days into T-2 ground school, and they were rescheduled to train in T-45s.

As it turned out, an opening became available, and I slipped into that spot. The third class of Goshawk students was formed. Between hot tub and yucca parties, Vernon's and The Yucatan in Corpus Christi, and numerous trips to San Antonio, Austin, Dallas, and Houston, we found time to study and fly. We also became great friends.

As the number of Goshawks on the line grew, we inched our way through the flight syllabus. It seemed as though somebody always had priority over our class for flight time. The result was a kind of stop-and-go training that does little to hone your fledgling skills or maintain proficiency. No flights in the syllabus were wasted on comfort time. A demo hop, a few instructor flights and a solo was the typical pattern. I guess that's the way it should be. It builds confidence and motivates you for the next phase.

Uncas, who was a "mega above" student, always seemed to be a little ahead of the game. Then, early on Friday morning, he and I were walking into the hangar at VT-21 for our four-plane formation, solo flight. I was a little nervous. We talked about the standard conduct of the flight and various items such as who would have the coveted Dash-4 position. Uncas mentioned that his bags were packed for a flight to his brother's wedding in Michigan and that he would be going directly to the airport in Corpus Christi following our flight.

We began prepping our briefing board in the ready room. Whiskey was our lead, Uncas was Dash 2, TJ and Kernel were dualed up at Dash 3, and I was slated as Dash 4. The brief covered emergency procedures, SAR contingencies and aircraft lineup. I was Kato 239, and Uncas was Kato 229. He didn't seem too

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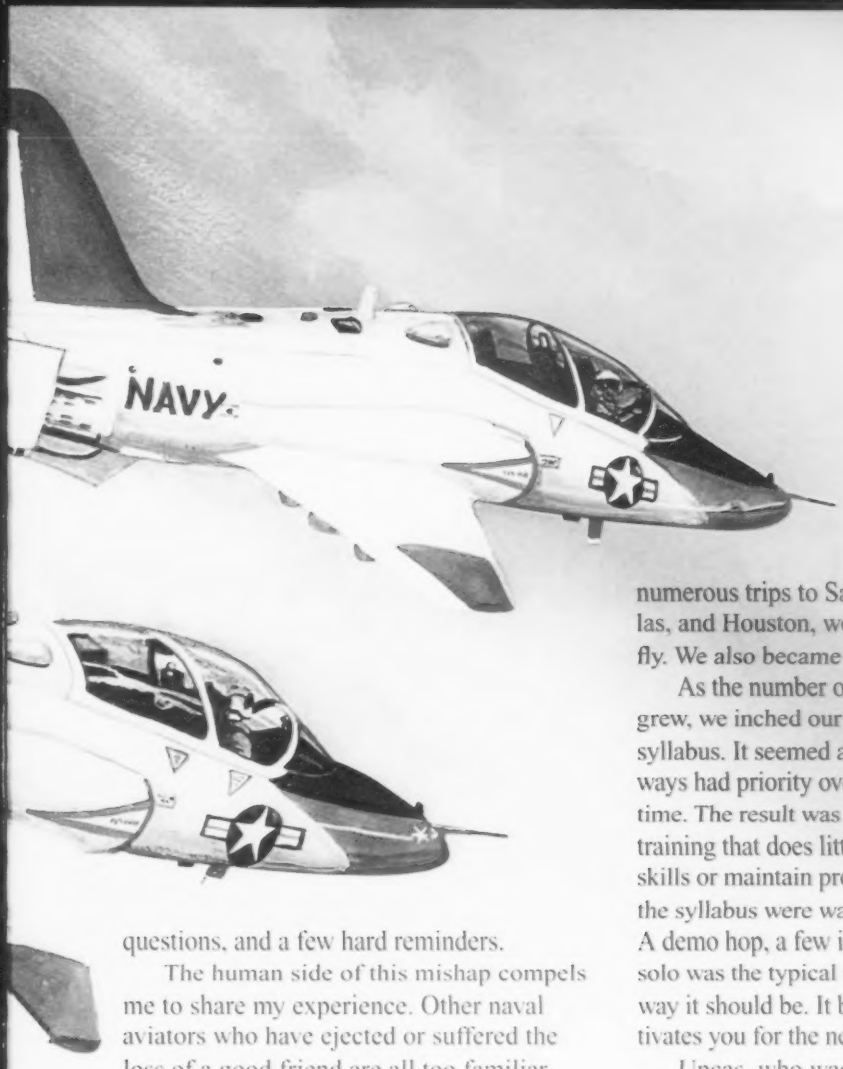

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happy about it. In the paraloft, he told me he had flown 229 recently and wasn't happy about the slow spool-up time of that aircraft's engine, even though it had recently tested within specifications according to maintenance control. He brushed it off and headed out.

We rotated through Dash 2, 3 and 4 positions, doing the same series of basic formation positions and maneuvers, a tail chase, and a CV rendezvous. Everything moved like clockwork until the last rotation.

Whiskey flight was in starboard echelon at 12,000 feet, 250 knots. I was Dash 2, and Uncas was Dash 3. The instructor-student aircraft was Dash 4. Lead signaled for a break-up and rendezvous. He broke left, and we followed in two-second intervals.

I scoured the sky for another chute but did not see one.

We would play out the break-up portion to end up 1,000 to 1,500 feet in trail at 250 knots. The gouge, especially as Dash 2, was to keep on the closer side of that to expedite your join-up and make it easier for Dash 3 and Dash 4 to get aboard.

Lead established a right turn for the rendezvous. I jumped out on bearing line and went slightly acute, but corrected back. As I approached the point in the rendezvous when you really begin seeing closure, a quick glance at my airspeed showed I was at 255 knots—a good place to be.

I soon began hearing communications on our tactical frequency.

Lead: Three, watch your closure.

Two seconds of silence.

Lead: Three, underrun.

Two more seconds of silence.

What followed was the sickening realization that two aircraft had collided. I'd like to say that I remember most of everything that went through my head, but the tape loop we create and re-live over and over again gets distorted with time. What I do remember is a huge rush of adrenaline, almost a controlled panic of sorts, and an attempt to get control of the aircraft. The jet oscillated a few seconds before lead called, "Eject, eject, eject!" as he saw parts of my aircraft's tail section ripping away. I looked down at the handle, put my head back, closed my eyes and couldn't believe I was about to pull the damn thing.

I was riding the rails just after I heard the third "eject."

My recollection of the ejection is compressed into a single event. The detonation of MDC [mild detonating cord, which shatters the canopy before the seat goes through], wind blast, rocket firing, and acceleration are all a part of it, along with fear.

The next thing I remember is the intense opening shock of the parachute and rapid deceleration, followed by a few swings in the chute. It took a few seconds to gather my thoughts and realize I had made it. My mind was racing. Two arms, two legs, a good chute. I was fine. Oh yeah, IROK. I went through those procedures and discovered my oxygen hose had disconnected from the mask. Also, I hadn't worn gloves, and I was lucky I hadn't hurt my hands.

I was happy. Then I was scared again. Who was in the aircraft that collided with mine? Did he eject? Did I eject too quickly? Was he OK? Was it my fault? Could I have done something to prevent what happened?

I scoured the sky for another chute but did not see one. I assumed he punched out after me and was above my canopy and out of my view.

As I drifted down, the winds out of the southeast kept pushing me in the same direction, even with the steering lines. As I was peering down, I got another dose of reality—two jets on the ground, one a big fireball and the other, strangely in perfect form, flat on the deck.

I was happy to be over farm land and not water or a populated area. Only one little

patch of cactus and mesquite to avoid, no problem. I began to make out the features of the earth below me. I kept trying to steer clear of the cactus, but that's where I landed.

I had noticed a farm road south of where I was going in, and I looked around for signs of another chute, but saw nothing. Trying to stay optimistic was getting tough. I headed out to the road I saw and started transmitting on 282.8.

"Kato Two Three Nine, safe on deck. I'm OK."

I soon got a reply from lead overhead, who had assumed on-scene-commander duties. Besides the non-English-speaking farmers who drove up, offered me water and left, everything went normally. I used pencil flares, but the mirror was my best signaling device. The helo arrived 45 minutes later.

As expected, the crewman came running after me, cut up all my gear, and threw me in the helo.

As we were preparing to lift off, with dust in the air and the sound of rotors whipping overhead, I heard a SAR crewman say something like, "The other guy didn't make it."

I can't describe that moment, tied down to a board, immobilized, getting no answers to my questions to confirm what I thought I had heard. My worst fear was slowly coming true. It wasn't until hours later, after undergoing intense medical evaluation, that anyone would confirm that Uncas was indeed gone.

Over the next few days, after the mishap board had gathered interviews from everyone, we began piecing the story together. Lead had seen Dash 3 go acute with excessive closure, at which point Dash 3 tried an aggressive correction at co-altitude. The instructor-student crew decided to hang back on bearing line until the rendezvous settled out more.

Lead then made his calls on tactical. Seconds later, Dash 3 hit Dash 2 (me) at 60 knots (angles can generate enormous closure rates without much relative airspeed difference). The fuselage and canopy of Uncas' aircraft had hit my tail. The impact cracked his canopy and severely damaged the aircraft, including his ejection seat, which streamed its parachute outside the aircraft. Investigators found my right horizontal stabilizer a half mile from the main body of 239's wreckage. Uncas never tried to eject. He may have been incapacitated.

What really happened? We know the cold, hard facts leading to the midair, based on witnesses and the aircraft data recorder, but does that tell the whole story? Many would like to point purely to pilot error and other human factors, but I feel there were possibly snakes in Brian's cockpit that we'll never know about.

Whiskey did his best to prevent the tragedy, and I owe him much for his actions. His ejection calls, which confirmed what my senses were telling me, got me away from an uncontrollable aircraft before pressing the envelope of a safe ejection. My injuries were minor, and I was flying a couple of weeks later. I was peppered around my neck and shoulders from the MDC-lined canopy, but my hands were OK. I've worn gloves ever since.

...two jets on the ground, one a big fireball and the other, strangely in perfect form, flat on the deck.

We take a lot of mental baggage into the cockpit every time we go flying. Some people are better than others at compartmentalizing, but we should all try to recognize when we may not be at our best on a given day. Our lives occasionally get complex, and it's our responsibility to know when we should scale back or even call time out.

Lt Inman flies with VS-32.

A Bingo Tale

by Lt. J.H. Waters

Part I

THE SHIP WAS CALLING for Case II recoveries during air-wing CQ. The nearest divert was 145 miles away, with weather forecast to be clear below 13,000 feet. For the highest altitude given, FL300, the forecast was a 40-knot headwind going to the divert field. I figured the Hornet bingo with three drop tanks was 3.4, providing 1,500 pounds on deck.

When I hot-seated, the jet's INS indicated the divert was now 175 miles. I planned for 180, which meant a state of 3.6. I launched for a trap, two touch-and-goes, followed by hook down for a second trap.

With state 4.2 approaching abeam, I figured 4.1 for the ball call. No pressure, bingo plus one. Coming through the 90, I saw a Tomcat taxi across the landing area to the port side. "Hurry up!" I thought.

"Three Oh Six, Hornet, ball, four point one." I called. Half of the Tomcat was still in the landing area. After the "Roger, ball" came the expected, "Wave off, foul deck."

Great! I need downwind! Looking for my interval, I saw one Hornet about two miles upwind and another at my one o'clock on downwind.

"Three Oh Six, say state."

With a glance at my fuel and a "Three point eight" call, I knew what was coming.

Tower obliged: "Three Oh Six, your signal is bingo. Pigeons three oh five, one hundred forty-five miles."

I cleaned up and started an easy climbing right turn for 170 degrees. The INS showed the divert to be 185 miles away. Could the SINS alignment be off 40 miles? I checked the waypoint. It was correct. I accelerated to 450 knots. Before I switched to departure, tower updated the distance to the divert, saying "Pigeons now three oh eight, one hundred eighty-five miles." Yeah, that was more like it. At least I had already planned for a 180-mile bingo.

"State now 3.6, my first bingo," I thought. Passing 4,000 feet, I was IMC and above the freezing level, I turned on the engine anti-ice and pitot heat. I also checked the wings for ice. "Fly the profile," I told myself. I opened the PCL to confirm the bingo profile, entered the new tacan channel, and switched comm 2 to Giant Killer, the coordinator for the local warning areas. "Wings level. Fly the profile," I reminded myself.

State 1.2. With the nozzles puckered and passing FL300, it see

in Two Parts

Passing FL250, I was VMC again and switched comm 1 to strike. Giant Killer surprised me by answering on my first call at 140 miles. With a "sweet lock, sweet comm," strike cleared me to switch and to return for an overhead no earlier than 1400. Climbing through FL330, I was IMC again and was still IMC leveling at FL400. I could see blue sky above me but no horizon. FPAS (Flight Performance Advisory System) showed the fuel on deck to be 886 pounds. What? I checked the winds, 275 at 165 knots. I adjusted the throttles to set what FPAS showed to be the current, best-range, indicated Mach number.

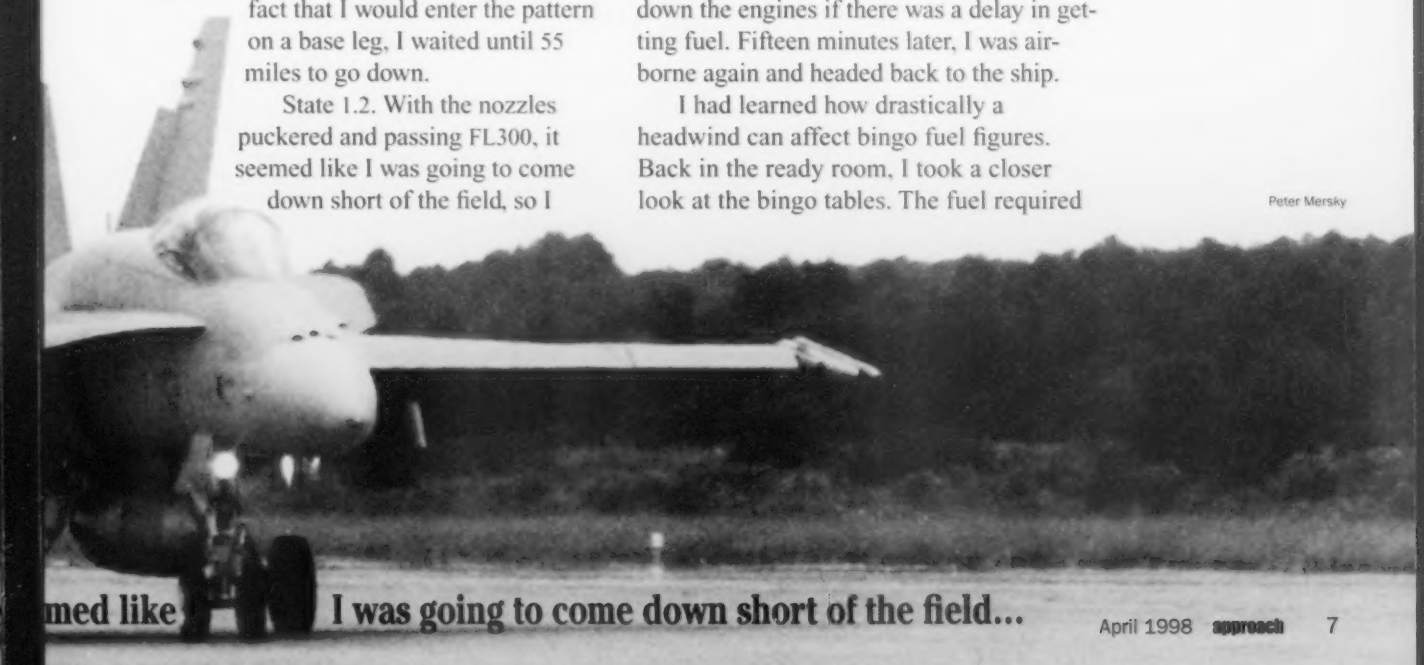
The divert field's ATIS reported the ceiling was 10,000 feet overcast with 4 miles visibility. The FUEL LO caution sounded with more than 90 miles remaining. The bingo profile called for an idle descent beginning at 60 miles. Considering the winds and the fact that I would enter the pattern on a base leg, I waited until 55 miles to go down.

State 1.2. With the nozzles puckered and passing FL300, it seemed like I was going to come down short of the field, so I leveled in VMC at FL250, set again what FPAS said to be the best-range Mach number, and flew 10 miles closer to the field. FPAS now indicated 947 pounds of fuel remaining on deck.

Approach cleared me direct to the field. Below 10,000 feet, I could see the coastline and then the runway. After reporting, "Field in sight," I contacted tower and descended to a 3-mile base leg. At two miles on final, I ran through the steps: gear down, flaps half, hook up, skid on. The hook was still down! On rollout, I saw I had 940 pounds of fuel left.

Waiting in the pits to get hooked up, I looked at the fuel page. Tank 2 had 440 pounds and tank 3 had 120 pounds. The other tanks each had 10 pounds of trapped fuel. Fortunately, the pit crew was able to get gas into the jet quickly. The FUEL HOT caution never came on, but I was ready to shut down the engines if there was a delay in getting fuel. Fifteen minutes later, I was airborne again and headed back to the ship.

I had learned how drastically a headwind can affect bingo fuel figures. Back in the ready room, I took a closer look at the bingo tables. The fuel required



Peter Mersky

med like I was going to come down short of the field...

for a 180-mile bingo with 150-knot headwind was 4.2 instead of 3.6 with a 40-knot headwind. The combined factors of a long distance and a much stronger headwind accounted for the fuel on deck being about 600 pounds below the planned 1,500 pounds.

Part II

TWO DAYS LATER, it was time for a couple of night traps. After a hot-seat and a night launch, I headed for marshal feeling behind the aircraft. I got two quick traps and was ready for someone else to hop in the jet for some fun.

The Boss called, "Three Oh Seven, we're going to send you for another one." Thanks. I launched just above hold down and followed suit with two bolters. Bingo! Here we go again. "Pigeons two eight five, one hundred five miles."

I got out the PCL to confirm the profile. I fumbled for my briefing card with the divert information. What was the tacan for Charleston? 82X. I looked up the frequency for approach.

"Charleston Approach…" There were no side tones when I transmitted. Why couldn't I transmit on comm 2?

Climbing through FL200 in the dark, it wasn't hard to see the two bright red, bleed-air warning lights come on. The voice-alert sounded, "Bleed-air left, bleed-air left" and both red lights went out. The left DDI indicated cautions for left and right bleed-air off. The cabin pressure started gurgling away. I reached down and secured the bleed-air valves.

"Strike, Three Oh Seven needs a rep." Then the flow in my mask quit. I disconnected my mask on one side and checked the cabin pressure—25,000 feet. Oh, yeah, immediate action procedures: pull the green ring for emergency oxygen and turn off OBOGS. I was feeling lightheaded. Where was the green ring? Man, I really felt hypoxic. I pulled the throttles to idle and noticed the throttle boost was gone. Where was the green ring?

I had just clicked on my flashlight to look for the green ring when I heard my skipper's voice, "Three Oh Seven, rep." I held the mask to my face.

"Yes sir, I had dual bleed-air lights with left and right bleed-air cautions. I've lost cabin pressure, I'm descending and feeling hypoxic."

The skipper advised me that getting the bleed-air off cautions was a repeat gripe and told me to cycle the bleed-air valves. Cabin pressure came back, and the oxygen flow in my mask returned.

Charleston was still 70 miles away, and I was at 17,000 feet. Leveling at FL330, appropriate for an 80-mile bingo, I tried clearing my head and finding the green ring. In other aircraft I have flown, the emergency oxygen control was near the inner left knee. In the NACES seat, the green ring is outside the middle left thigh. I was sitting on it! Hypoxic and in the dark, I had reverted to an old habit.

The rest of the flight to Charleston was uneventful, and I landed with 2,200 pounds.

If the bleed-air failure had happened two days before during the day CQ and the 180-mile bingo, I would not have been able to make it to the divert field flying at 10,000 feet. The emergency oxygen supply in the NACES seat lasts a maximum of 20 minutes. The profile at FL400 with winds took over 30 minutes. You have to know how much fuel is required for a bingo at sea level.

And you have to be able to find the green ring in the dark even when you are sitting on it.

Lt. Waters flies with VFA-15.

CHUM Isn't for Bait

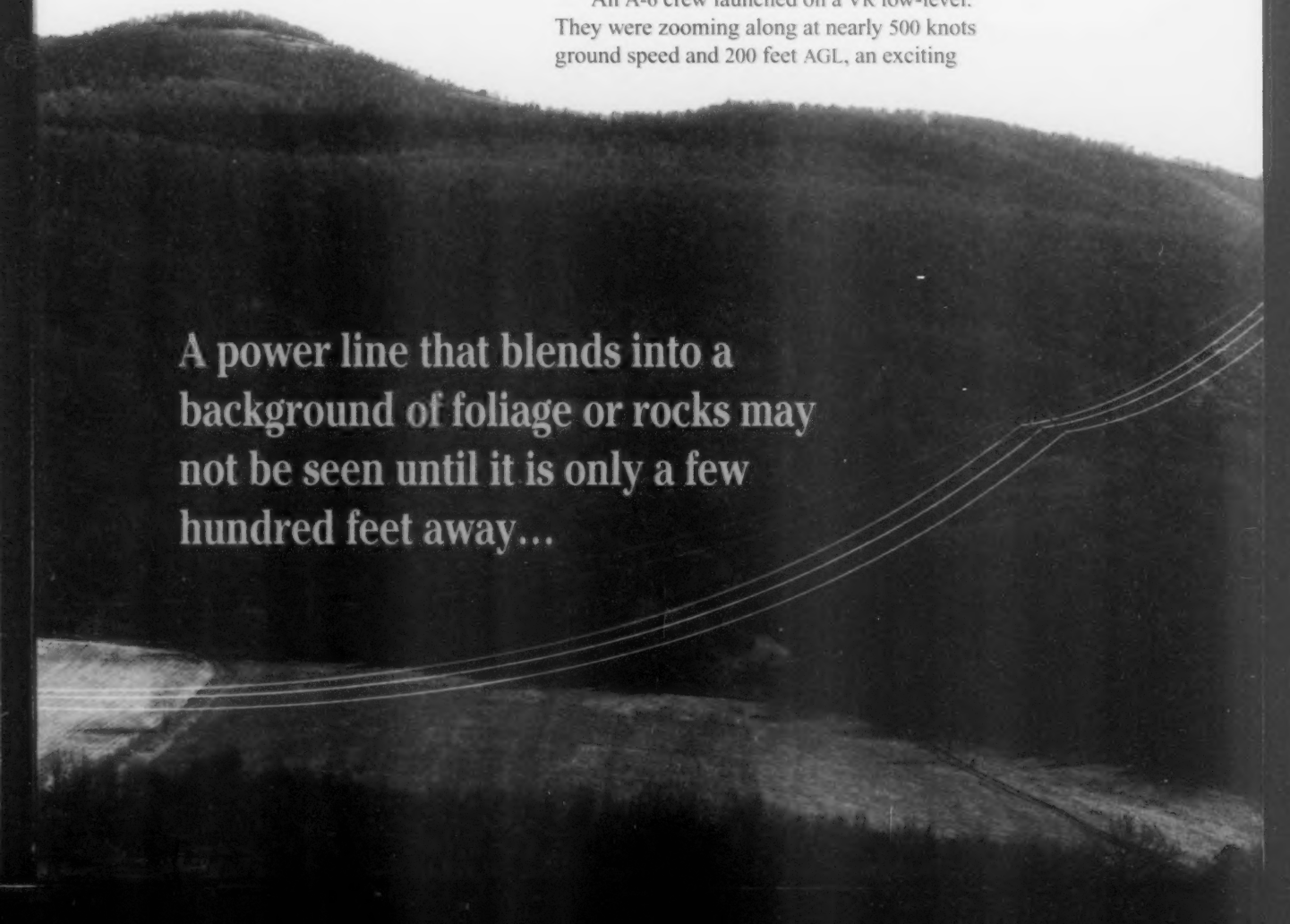
by Peter Mersky

AVIATORS TEND TO TAKE military training routes (MTRs) for granted. These canned itineraries can be conveniently programmed into the daily flight schedule, and usually provide both general and specific mission training. Checkpoints and altitudes test our pilotage skills, and if we have a good hop, we're set for the day. As we get familiar with "our" MTRs, however, we also risk losing our SA and running into—literally—other aircraft or obstructions.

The burden, of course, is not solely on military aviators; everyone who flies should avail himself of every source of information to plan his flight. Civilian operators should consult latest material in the *Airman's Information Manual* (AIM); military crews should check the *Chart Updating Manual* (CHUM) and its supplement. These publications give the latest information on newly placed towers, wires and other obstacles that aircraft may encounter during low-level flight.

As military aviators should always plan their low-levels, and meticulously adhere to each MTR's requirements for checkpoint entry and exit, so should other pilots be aware of operations along these dedicated portions of air space.

An A-6 crew launched on a VR low-level. They were zooming along at nearly 500 knots ground speed and 200 feet AGL, an exciting



A power line that blends into a background of foliage or rocks may not be seen until it is only a few hundred feet away...

The pilot had flown into power lines strung across the Tennessee River.

hop. Suddenly, in less time than it takes to read these words, a civilian crop-duster appeared (its estimated speed was a bare 96 knots). The collision that followed destroyed both aircraft, and injured three men.

The collision point was on the MTR's centerline, only nine miles from the final checkpoint. Although a case was made for the A-6 crew's not having been at the required altitude, because of ambiguities in the altitude restrictions of the VR route, fault also lay with the civilian AG-CAT pilot who had not adequately checked the operating range of the MTR and who had blithely flown through what was known to be a hot area. There was enough blame to go around.

"See and avoid" is a nice little buzz phrase, but at a closure of 600 knots, it loses its impact—pun intended.

Midair collisions between military and civilian aircraft continue to plague us. Civilian aircraft, particularly light, recreational aircraft such as ultra-lights and gliders, enjoy a great degree of freedom, much like pleasure boats.

Glider pilots must be licensed, but ultralight operators do not. Overall, these aircraft have the run of the air. Their domains are noted on various flight charts—symbols for glider parks and parachute drop zones dot sectionals and TPCs with an implied warning to other pilots to avoid these particular places.

There are known areas that experienced flight crews know, such as the Imperial Valley around El Centro, and the slopes and foothills of the Appalachians. But incidents do happen.

An A-7 pilot launched from Miramar on a cross-country back to Lemoore. The low-level promised to be an enjoyable, scenic flight home. As he approached his last checkpoint—a mountain peak with a ranger tower—he turned left to get on the last leg of the trip. As he rolled out, he found himself heading toward a glider on the other side of the ridge. The civilian was heading straight for the Corsair. Although the glider pilot tried to avoid collision, it was too late.

Fortunately, both aircraft and their pilots survived the collision, with varying degrees of damage to their planes and their egos. The Navy reimbursed the glider pilot for the damage—gliders do have the right of way, even on low-level routes, and even though the low-level was plainly shown on the glider pilot's sectional.

When you're planning for MTRs, account for obstructions on the ground. Power lines and their supporting towers materialize with disconcerting frequency along familiar routes. If you don't know they're there, you could be in for a surprise.

The young pilot of an AV-8B was part of a two-plane training sortie that included low-level navigation and low-altitude tactics (LAT). He had 250 hours in the Harrier; his flight lead was an experienced AV-8 driver.

The hop seemed to go OK, but when the two intrepid Marines returned home, they found that the wingman's aircraft had a damaged wing tip and horizontal stabilizer.

Several wing pylons and the Harrier's 25mm-gun housing were also damaged. Pieces of wire also hung from the aircraft.

The pilot had flown into power lines strung across the Tennessee River. The wire was at 100 feet AGL, 100 feet below what the LAT rules of conduct allowed for this sortie.

The junior pilot and his lead had not adequately reviewed their route. To make matters worse, other marks obscured the wire symbols on the chart. The mishap board said that if the two pilots had paid more attention to highlighting the wires, the wingman would not have been so low, knowing that there were such prominent obstructions in the area. At 420 knots—seven nautical miles a minute—the young pilot might have seen the wires, but he would have had no time to react and avoid them.

Power lines are the specters that constantly haunt aircrews on low-levels. An Intruder crew was enjoying a low-level through a valley in West Virginia when they flew into power lines 432 feet above a valley floor. Fortunately, the lines were thin enough to break as the attack bomber struck them. The only damage was two gashes on the outboard slat.

The weather was 3,500 feet, scattered, with 30 miles visibility, and the crew was well above the minimum authorized altitude for the leg. SOP was a minimum of 200 feet AGL. They were also on centerline, and had reviewed hazards during their brief. But had they checked everything?

A one-inch high-tension line silhouetted against a blue sky on a day with good visibility can probably be seen more than a mile away. A power line that blends into a background of foliage or rocks may not be seen until it is only a few hundred feet away, much too late for a crew to react. The investigators in the West Virginia mishap found that they couldn't see the wires—even though they knew wires were there and were expecting to see them. Only when they turned and looked back, with the wires against the sky, did they see the hazard.

F-14 aviators are becoming more involved with low-level flight these days. Four Tomcat crews briefed for a low-level navigation mission, with a "civilized" brief time of 0900. The flight lead was a highly experienced pilot with a junior RIO. The crews used CHUM information in the brief.

When Dash 4 had a maintenance delay, the flight launched as a 3-plane. Settling onto checkpoint Kilo, a railroad bridge over a river, Dash 2 reported a bird strike and climbed off the route. The flight returned home without further problems. A postflight walk-around revealed damage to the canopy, wings and a five-foot piece of static line wrapped around the F-14's nose. Flying at 420 KIAS, the crew had only a second to recognize and react to the obstacle—clearly an impossible time requirement.

We don't often talk about non-aircrew aspects of the mission, but here's a case where a mishap might have been avoided by an up-to-date chart library. The CHUM and TPCs the crew used were just barely out-of-date, but enough so that the new static lines weren't on the charts they had. Intel officers, take note!

And as extra note of insurance, when you file, take a moment to check in the flight-planning spaces with the ODO or flight-planning supervisor. He'll have updates and changes to your MTR that might not have made it from the quarterly meeting to the most recent edition of your chart.

We ran this article in the November 1994 issue. The information and discussion bear reviewing.

by LCdr. Stephen Beckvonpeccoz

I WALKED OUT TO MY TA-4J for a later-stage ACM hop: a little 1 v 1, just me against my instructor. For an about-to-be-winged SNA, this would be one of the best flights in the whole jet training syllabus, a true test of how much I'd learned and how well I could apply it.

The only glitch during preflight was the left strut that looked a little over-pressurized. We manned up and taxied to the duty runway for a section go in perfect weather. After we got out to the operating area, we set up for head-on passes with each of us starting neutral. After some great dogfights and looking up a tailpipe or two, we headed back home.

I took the lead and brought us into the break for the short (6,000 feet) runway. After a nice, crisp break, I was set up for a touch-and-go. A stiff, gusty crosswind blew from the left, but I'd already been to the boat and could land the Scooter well.

"Correct for the crosswind, touchdown and go to MRT, rotate and call for downwind," I thought. I turned downwind, completed my landing checklist, and called for a full stop. My lead had already landed and I was number two to follow another A-4 on final. I'd take the right side of the runway since he'd take the left. The crosswind had picked up, but I'd always prided myself on my wing down, top rudder technique.

I came up on the power a little bit, left wing down, right rudder, and flew the ball to touchdown. Bang! Another hard Navy landing. Throttle to idle—it took a split-second longer because I was up on the power. Then I checked for spoilers; they were up. Looked at my line speed and started braking. Hey, I wasn't slowing like I should. I rechecked the spoilers. They were back down.

"Better go around," I thought. I came up on the power. This crosswind took a lot of left stick, and the wings still weren't level.

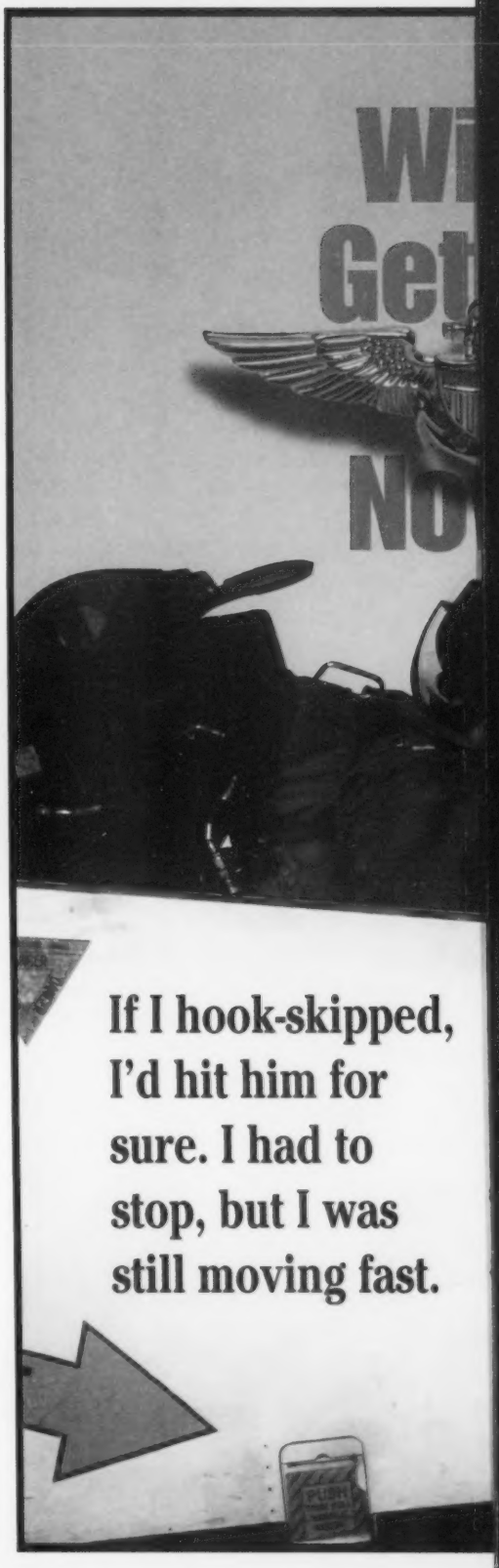
This engine spooled up forever, and the guy who landed in front of me was crossing my side of the runway just past the long-field gear. I wondered if I could clear him this late in the game. I had full left stick in, but the crosswind was strong.

"Here comes military power, finally," I thought.

The nose yawed right, toward the edge of the runway. I could see the trees. Left rudder and left stick—the combination was uncomfortable and getting worse with power. The nose wanted to go everywhere. I didn't like this, so I decided to keep it on deck. Throttle immediately to idle, speed brakes, hard braking, there's 80 knots at the 3-board, and he was still in front of me. Get off the runway!

I knew that if I put my hook down now, I'd trap and the wire would pay out right into him. If I hook-skipped, I'd hit him for sure. I had to stop, but I was still moving fast. Would I get hurt if I punched out?

I concentrated on keeping the nose straight. I knew the skipper



would kill me if I crashed this airplane. Airspeed. Don't blow the tires. What if I don't get my wings? I still had full left stick and there was no nosewheel steering. Come on, please slow down. I swear I'll never do this again if you just let me get through it.

Finally, the other guy was clear, and I saw that I wouldn't hit him if I had to take the long-field gear. Then I saw I could stop without it. Whew! Stopped at last, just short of the gear in a 4-degree right bank, about 5 feet from the right side of the runway. This was not cool.

The runway duty officer asked, "Seven Oh Four, are you experiencing any difficulty?"

"That's affirm," I replied after taking a breath. "I think my starboard strut has collapsed."

"Yeah, that's what it looks like from here."

Well, that's not what it was. The over-pressurized left strut compressed normally on touchdown, activating the left weight-on-wheels switch and popping up the spoilers as I looked in the mirrors. As soon as I looked down the runway, the strut decompressed more than normal and disabled the left weight-on-wheels switch, thereby disabling the spoilers and nosewheel steering.

Although I had full left stick in for what I thought was only the crosswind, the struts had me in a 4-degree right bank rolling down the runway. A-4s don't like runways much to start with. Lucky me.

Should I have stuck with my decision to go around? Maybe. It felt like the situation was getting worse, so I changed my mind. Taboo, you say? The most verboten thing you can do on a runway?

We are told repeatedly that once we make a decision to abort or continue, to stick with it. Generally, that's excellent advice. But as they also say, the situation dictates the solution. The thought process is light-speed quick during an emergency, and after this incident was over, I was amazed at how many thoughts (both critical and trivial) went through my head.

In my case, the combination of a short runway, a left crosswind, a left strut problem, and another aircraft taxiing across the end of the runway added up to a bad situation. My uncertainty about being able to take off again in controlled flight, having limited runway remaining, and worrying about clipping the other A-4 overrode my uncertainty about staying on the runway and stopping safely.

My decision was a good one. The biggest lesson I learned was that in extremis, when you're not sure what's wrong or what you can do to fix it, you still have to instantly evaluate what's happening and react correctly to the best of your judgement. All the what-ifs in the world are great, but when it suddenly happens to you, only you can determine the outcome.

LCdr. Beckvonpeccoz flew Prowlers with VAQ-138. He is now assigned to the U.S. Space Command.

Click? What Happe

by Lt. Brian Albro

IWO JIMA is a pork-chop-shaped island that's about three miles wide and four miles long. It is 646 miles from the closest divert (NAF Atsugi, roughly a 9.0 bingo) and sits by the Marianas Trench (known for deep waters, swift currents, and sharks). There isn't much there except the airfield and Mount Suribachi.

It was our first night bounce at Iwo Jima. It had been five months since we'd done the boat. We had our crew brief and discussed the nuances of the night-carrier pattern. It seemed like another great opportunity to bag hours.

We had been a standard crew on cruise and were happily back together, ready to get home to mom and show off. My pilot was a Cat II with more than 2,300 hours in type, former CAG LSO, the works. I had a salty cruise under my belt and more than 500 A-6E hours.

After the first scheduled period, we debriefed in the hot pits. Both of us commented on the unusually calm winds in the pattern.

"If we could bottle this, take it to the boat and sell it, we'd be millionaires!" my pilot observed about his passes. It was a beautiful night, there were no heinous crosswinds (as had been the norm on the dark little island), and the ILS had been dropping us off on-and-on for the ball. It was almost enjoyable.

After refueling, we taxied to side of the pits, got a new inertial alignment and did our takeoff checks again.

"Flight controls free and visually checked. AFCS has checked good for the last hour." Those words would come back to haunt us.

After holding short for a time, we were airborne once again. Our Intruder had its NLP (night landing pattern) fuel load and dirty configuration to burn down to max trap.

The first pass was like the last ones, on rails and uneventful. The second pass had us at max trap on the ball.

ned to the Clunk-Clunk?

"Five One Oh, Intruder, ball, five point five," we called. The gear touched down, MRT, boards in.

"Five One Zero, airborne."

The gear came up to save gas. The controller responded, "Five One Oh, climb to angels one point six. You are cleared downwind."

I asked, "So, what'd you see that pass?" My pilot began to give the LSO-ese debrief that I dutifully copied down. Still head down and writing, I felt the plane roll out, I assumed, to the downwind heading. I assumed wrong.

The next thing I knew, my pilot slammed his hand down on the AFCS emergency disconnect as he fought the aircraft's uncommanded right roll and kicked in a boot-full of left rudder.

He screamed, "Get it off, get it off!" referring to the flight-control stability augmentation system.

By the time I reached the switch on the center console, the disconnect had deactivated the system. My pilot immediately noticed the two flight-hydraulic gauges at zero.

As we started aviating and navigating, I pulled out the PCL and told approach that we had a hydraulic failure and needed to prepare for an immediate landing. A squadronmate in the pattern saw us overhead and immediately joined to help.

On the way up, my pilot dropped the gear handle and heard an unpleasant "click," instead of the resounding "clunk-clunk-clunk" of three down-and-locked.

I began reviewing "gear-handle down, unsafe indication" in my PCL. In the meantime, the nosegear door had decided to open itself as our wingman joined. We told them we were going to blow the gear down in about 10 seconds. We blew the gear and got a solid gear indication as well as good visual confirmation. About then, we suspect, our right combined pump died.

The other aircraft in the pattern recovered as we were vectored for a long straight-in. After an uneventful ball call and a spectacular sparks show, we trapped in the short-field gear and survived the tow of shame back to the line.

I never saw my pilot moving his hands to the ejection handle, and the thought didn't cross my mind.

I wondered how fast the Japanese SAR helo could have gotten airborne.

I never saw the right-combined gauge at zero (the gauges are a little difficult for BNs to see at night, anyway).

The mechs on deck said we had minimal amounts of hydraulic fluid remaining in our last pump (the fluid had drained through the bad pump).

There were a lot of factors in our favor that night: good weather, a wingman airborne, time in the airframe (not to mention that my pilot had experienced a similar problem in the past), and familiar controllers.

What could we have done better? Perhaps knowing my PCL better to expedite landing and having a better scan on liftoff.

We should remind ourselves to occasionally "what if?" I had reviewed our mission procedures for a hydraulic failure many times but not recently. I normally "what if" the ejection, but not always the situation that puts me there. Can I recite at any time the control surfaces associated with their respective pumps? Now I can. And you can bet my scan includes those gauges more often.

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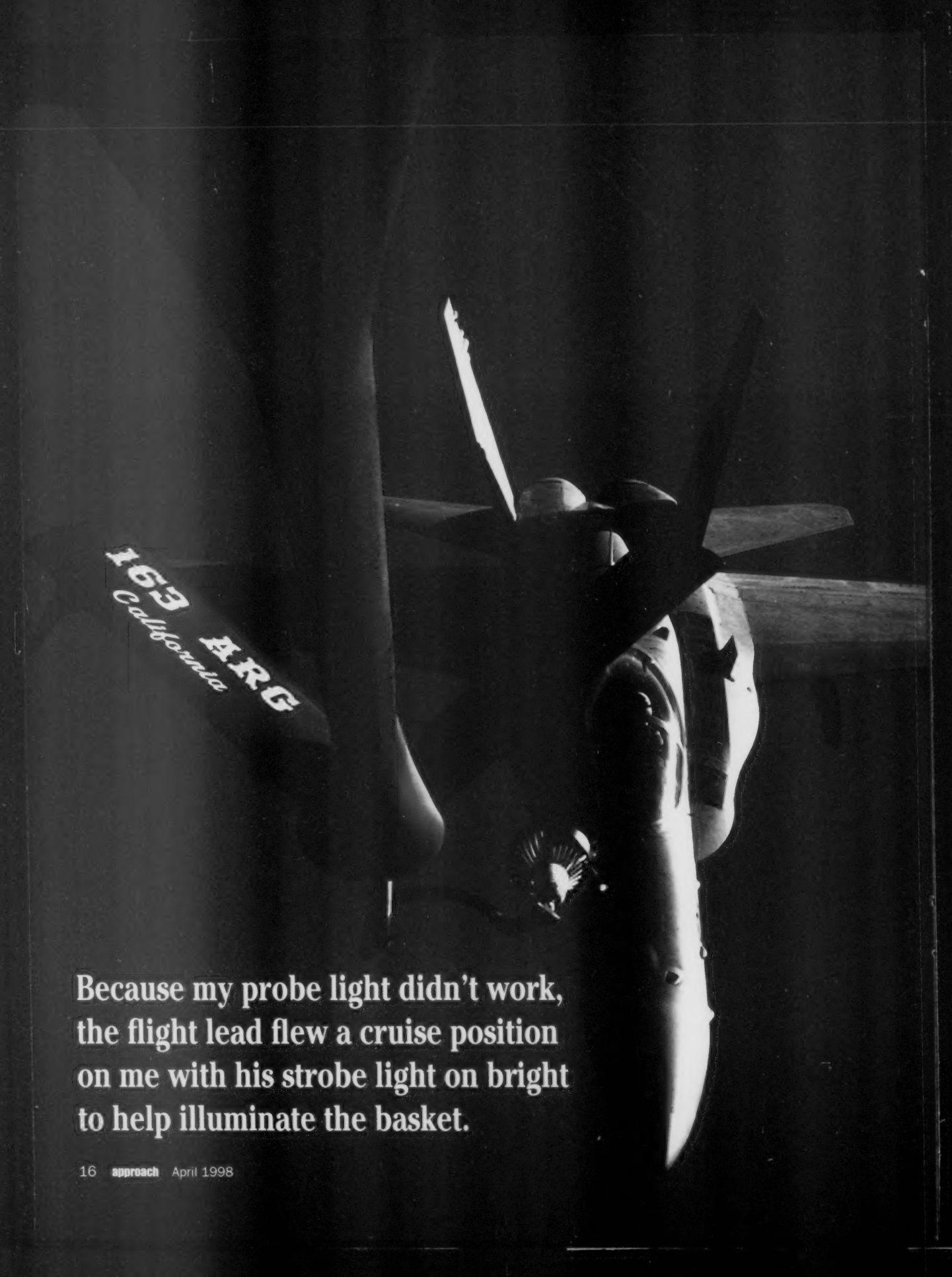
Lt. Albro flew with VA-115. He is now assigned to VAQ-135.



Because my probe light didn't work, the flight lead flew a cruise position on me with his strobe light on bright to help illuminate the basket.

Jakarta Joe

by Lt. Joe Reeves

AS I SAT STRAPPED TO CAT 4, I basked in the glow of a good-deal pinkie launch and 1+15. I ran up the engines and wiped out the controls. The lights came on, and magically, 150 knots appeared in the HUD. With the flight deck behind and airspace above, I cleaned up the jet, accelerated to a decent climb speed and proceeded on a typical Case III launch. Life couldn't get any better.

Passing through 5,000 feet, I reached down to make the final hard-bug adjustment when I noticed the L GEN caution light illuminate.

"No sweat," I thought, "a stray tron, 09C, lots of possible reasons it could have kicked off line." The NATOPS procedures were cut and dried, but just to be safe, I called for a CATCC rep on button 6 and the flight lead, a seasoned JO, on squadron common.

Following their guidance, I tried a single reset, but without success. I secured the left generator for the rest of the flight. With the decision to reduce the electrical load on the right generator, i.e., radar off, which aborted our planned mission of 2 v 2 screened-target AIC.

Still climbing to the rendezvous altitude on a heading directly into a sunset, we would soon appreciate our pinkie launch. Shortly after I secured the radar, the INS dumped. At first, we assumed it was the common switchology error of securing the INS instead of the radar (two wafer switches separated by about two inches). But then we lost the on-board oxygen generating system (OBOGS), mission-computer one (MC-1), which disables all cautions and advisories except MC-1 and HYD IA, IB, 2A and 2B. The lead called for my exterior lights, which I had turned on back on cat 4. The CATCC rep now realized the left generator failure was associated with an open GEN TIE. Because of the MC-1 failure, the only way of knowing if the GEN TIE was open was to compare the lost systems with the NATOPS power distribution chart.

Approximately five minutes after launch and in a slight descent to get below 10,000 feet, I heard the first of several earth-shattering warnings.

"Engine fire left, engine fire left…"

After a couple of seconds of sheer terror and disbelief, I instinctively did all NATOPS procedures, tightened my straps, located the ejection handle and quickly scanned the sea surface for the nearest battle group asset.

I shut down the engine and activated the fire-bottle; there were no secondary indications of fire. My flight lead inspected my aircraft for damage. He didn't see any external indications of fire, but the fire-warning system continued to sound off for the rest of the flight, and then the left engine seized.

I was facing a night, single-engine landing without INS, limited displays and avionics and no exterior lighting. The carrier made an emergency pull forward and was ready to take me in three minutes. Although the plan was to send me away to Jakarta, Indonesia, 250 miles away, the Boss agreed

to give me a couple looks at the deck first.

We proceeded overhead mother to troubleshoot and to formulate a plan of action. The E-2C headed east to coordinate with Jakarta ATC. We pushed on the approach and adjusted gross weight. We used the first approach to get comfortable with the configuration and to give paddles an idea of what he would have to work with.

I made whistling-ghost calls to tell the tower when I crossed the runway threshold, landed and taxied clear of the runway. They never saw me.

With my Hornet's gear down, the only light available was my approach light. I didn't get an ACLS (automatic carrier landing system) lock-on, and the ILS didn't work because of the MC-1 failure.

On the second approach, we were on-and-on at the start with good ACLS needles. However, the aircraft's external light configuration was unsafe to bring aboard single-engine. The LSOs couldn't judge the aircraft's glideslope position based on a single-point light source without a defined horizon.

With 3,400 pounds of fuel, I went to the tanker overhead for an airborne pump to the beach. Single-engine tanking was challenging but doable. I used half flaps and 170-180 knots, which served to significantly reduced the yaw effects of power and changes in AOB. Because my probe light didn't work, the flight lead flew a cruise position on me with his strobe light on bright to help illuminate the basket. Tanking went smoothly, and the give was extremely generous.

By the time we completed tanking, the E-2C had coordinated the transit and approach with Jakarta ATC. Because I had no external lights, limited avionics and one engine, the flight lead was also the formation lead, a position normally reserved for the problem aircraft. Even with night-vision goggles, my aircraft was virtually invisible except looking directly down the right exhaust pipe. In Jakarta, I detached for a safe 10-mile straight-in. I made whistling-ghost calls to tell the tower when I crossed the runway threshold, landed and taxied clear of the runway. They never saw me.

An investigation determined the source of the difficulties was a major short circuit in a wire bundle in the left engine bay. The bundle contained wiring for the alpha fire-detection circuit as well as the left generator and GEN TIE system. The mechs had replaced the generator just before the flight, and the aircraft had had problems with the same wire bundle seven months before during CQs.

It took three weeks and the best maintenance crew TAD funds could buy to get NK 303 back to mother, more than 2,500 miles away in the Persian Gulf.

At least two lessons can be learned from this ordeal. First, following bold-faced procedures usually makes the difference between filling out a hazrep and a mishap report. Second, taking the most conservative route, nine times out of ten, will leave you satisfied with the outcome.

Lt. Reeves flies with VFA-113.

Burritos *and* Birds

by Lt. Jay R. Vannice

It SEEMS THAT MOST ACCOUNTS of bird strikes involve a few large birds or 20 to 30 medium-sized birds. These strikes often make an engine flame out, crack a canopy or even bring down an aircraft. Although we didn't crack our canopy or lose the aircraft, we mashed through a massive flock of seagulls at 115 knots, hitting more than 100 birds.

It had been the usual fleet CQ before a major work-up. My copilot and I had gotten our day-qualification earlier that day, with two traps and two touch-and-goes apiece. We grabbed burritos and crashed at a buddy's house, where we drifted into a three-hour food coma, dreaming of full moons and night traps.

After a late evening brief, we left the ready room to get our night traps. We reviewed the books for aircraft 603, then suited up and lugged our gear and overnight bags to the aircraft. The line was quiet—we were one of just three aircraft on base operating that night. After our preflight and prestart checks, we started engines, turned on the taxi light and called ground for taxi.

Ready to get the flight on its way, ground cleared us to switch to tower 3,000 feet before the hold-short. Tower cleared us for takeoff and told us to switch departure once airborne. We taxied into position and went through our final takeoff checks. After everyone reported they were ready, I released the

Our Hawkeye shuddered with several loud bangs as the flock of 100 birds hit our 27-ton

toe brakes and smoothly applied full power, watching the engine instruments rise as we started our takeoff roll.

We gathered speed, and everything seemed to be tracking well. Then, as I applied slight back pressure on the control wheel, the copilot gasped, and I said, "Birds!"

A massive white cloud of birds was flying right to left, 5 to 20 feet off the deck just past the 6,000-foot marker, approximately 500 feet in front of us.

I applied forward yoke pressure and ducked my head just behind the glareshield, keeping runway centerline in my scan. Realizing there was no way to avoid the birds, I began aborted-takeoff procedures and pulled the power levers to flight idle. The cloud of seagulls engulfed the aircraft.

Our Hawkeye shuddered with several loud pops and bangs as the flock of 100 birds hit our 27-ton Cuisinart.

I said to the copilot, "Multiple bird strike, aborting."

"Left generator," he replied, then he reported methodically to the tower, "Tower, 603, aborting, multiple bird strikes, port engine out."

Bloody bird matter coated the windshield. I had a left generator light, and the left-engine rpm was slowly descending. My IHP was near zero, and the aircraft was drifting slightly left of a blurry and distorted centerline.

"Port engine out?" I asked.

"Port engine out." the copilot agreed.

I feathered the engine, then pulled the power levers into ground idle. The aircraft then began drifting right across centerline. I asked for the airspeed and gear location.

My copilot replied, "Ninety knots," as I scanned the airspeed indicator and applied differential braking to help the rudders place the aircraft on centerline. I could barely make out the distorted runway lights and centerline while referencing the aircraft's primary heading gyro to confirm runway heading.

The red glow of the runway abort lights was in the distance and closing. I couldn't read the runway-remaining markers, so the copilot quickly read them as they flashed by his side window. I called for the airspeed approaching the gear. The copilot reported 40 knots.

I eased off on the brakes passing the 2,000-foot marker, as the copilot reported zero knots. The aircraft stopped on centerline with approximately 1,000 feet of runway remaining.

Tower reported, "The crash crew is on their way. Do you require any further assistance?"

"Stand by," we replied.

Considering the poor visibility, we decided to shut down on the runway. Besides, the left-mainmount brake was glowing and probably fused after the high-speed abort.

The copilot told tower we needed a tow. We shifted the starboard engine into low-

pops and Cuisinart.

speed ground idle (from 100 percent to 71 percent rpm) to lessen the possibility of ingesting more birds while maintaining electrical power for aircraft external lighting and communications with tower and ground. With two aircraft at the hold-short or position-and-hold, ready for takeoff, we told tower to hold all takeoff traffic.

When the crash crew arrived and approached the front of the aircraft with signal wands, we reported to tower we were shutting down engines and communications.

"Please tell our maintenance section about our problem," we said.

After getting clearance from the crash crew to leave the aircraft, we climbed out through the main entrance hatch after the port main mount had cooled down. The crash crew said the port mainmount had been slowly deflating when they arrived. As we waited for our squadron reps to arrive, we assessed the damage.

There were bits and pieces of 92 seagulls strewn over the runway. Some 20 seagulls checked into the aviary treatment center, and five birds were embedded in various sections of the aircraft. Our E-2 had two FODed T56-A-427 engines, one cracked propeller, one cracked rotodome, all leading edge surfaces dented or chipped, and various broken antennas and lights.

The five bird strikes on the cockpit windshields did not crack or break the canopy. If we had been hit in the face by glass and a five-pound object at more than 100 knots, it would have been hard for us to track the runway centerline. Also, it was fortunate that the FODed starboard engine did not flame out during the abort. Without at least one engine, we would have lost all electrical and hydraulic power, and we would have had only auxiliary brakes, the arresting hook, and a very dark night.

Looking back, a few important points come to light. First, we were healthy and well-rested. The Grande Burrito and ensuing three-hour food coma helped us react correctly and without hesitation as a crew during a dangerous situation. In naval aviation, all of the systems knowledge and experience are useless if your body is exhausted and your scan and situational awareness deteriorate. Crew rest may be the difference between flying the same aircraft another day, or having a lot of explaining to do.

After witnessing first-hand the damage that 100 five-pound birds can do to a 54,000-pound airplane, I could only imagine what the plastic surgeon's bill would have been to remanufacture a human face. Always use your visor.

Lt. Vannice flies with VAW-112.

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Lt. Vannice flies with VAW-112.

"I've Got It!

As I reached do ejection handle, my

by Lt. Matt Leahey

I WISH THIS STORY was about high-G maneuvering and fast-paced snapshots in R589, a scant hundred miles from the skyline of Tokyo. Unfortunately, our story begins three miles behind *Indy* at 800 feet and 400 knots.

My pilot and I had recently been crewed together, and after 13 flights bouncing at Iwo Jima and a quick CQ, we manned up the spare for a Joint Tactical Maritime Air Superiority mission in mixed section with our local Hornet brethren. Five minutes before the launch, our lead went down in the chocks, and we taxied to Cat 4. The Air Force didn't show, and we couldn't contact them on guard. So we flexed to an in-house 1 v 1 AIC mission and headed back for the overhead pattern.

With our Hornet playmate on our wing and clear blue skies overhead mother, we reported a 10-mile "see you" and switched up button 6, expecting to enter the low-holding pattern and start hawking the deck.

Instead, at nine miles astern, the Boss called for us to charlie upon arrival. We began our descent to 800 feet and programmed the wings aft manually. With the pattern open, we accelerated to 400 knots, checked BRC, and set up on extended centerline for the break.

I made one last check upwind on the pulse scope, and then my pilot asked me if I was all set for the break. One "yes" later, we aggressively rolled to approximately 80 degrees AOB and rapidly increased G to what I thought was normal for the airspeed we'd carried into the break. I watched the airspeed decay rapidly to 300, then called, "Wings." I checked the left wing tip for movement. At 290 knots, the wings began programming forward normally in AUTO.

Much to my amazement, instead of the aircraft rolling right to a decreased left-wing-down attitude, I sensed an increased overbank to approximately 135 degrees left-wing-down, as the nose began a slight yaw to the left.

Immediately, the ICS and radio came alive with assorted voices. The first I recognized was my pilot's voice: "I've got it! I've got it!"

Almost simultaneously, the Boss was yelling, "Power! Burner! Attitude!"

My eyes widened as blue water filled our canopy, and the ripples of the Pacific rapidly got bigger.

"Burner! Burner!" the LSOs yelled. The aircraft began to roll wings level while I noticed we were at 200 knots and descending through 300 feet. As I reached down for the lower ejection handle, my pilot again yelled, "I've got it!" as the aircraft squatted in a slightly nose-high attitude and G came back on the airframe.

With the horizon two-thirds of the way above the canopy rail and the Pacific lapping at our ventral fins, our Tomcat wallowed as it tried to accelerate and climb.

I've Got It!"

wn for the lower pilot again yelled...

As the onset of G diminished, my pilot again said, "I've got it," and we indeed began to climb and accelerate. I slowly released the lower ejection handle.

With my heart in the back of my mouth, I tried answering the Boss when he asked if we wanted to take a straight-in for recovery. My pilot declined, and we set up for a much less aggressive break to an uneventful pass into the wires.

"Glad to have you," the Boss said.

After a couple of long stares from our friends in the air wing, we made our way back to the ready room for the tap dance.

Before anyone could grab us, we discussed the departure, and I learned exactly what had happened in the front seat. Quick chats with CAG, the Boss, Ops, and skipper followed, but a half hour later I was in front of the white board briefing an air-wing bombing mission over "the Rock."

Here's what happened. In the break, we overbanked and decelerated with an aggressive pull; the left wing stalled. The remaining lift on the right wing caused the overbank to 135 degrees left wing down and the left nose slice. My pilot immediately recognized the situation and unloaded the aircraft to reduce the AOA which caused the departure. He continued nose-down to get flying speed back on the wings.

He rolled the aircraft wings level with rudder, not stick, to avoid making the problem worse with adverse yaw, rotated to a nose-high attitude and selected burner to climb away from the water. It was a series of varsity corrections in a low-altitude departure.

How many times have we all entered the overhead and aggressively tried to get downwind? And how many times have we stopped and briefed procedures for a low-altitude departure in the break? I was fortunate to be flying with a pilot who immediately recognized the departure symptoms and recovered in minimal time. Throughout the 15-second incident, I did not get out a single word to direct the pilot's actions.

A more junior pilot may have tried to roll upright with stick, or simply reefed aft on the stick as the water filled our windscreen. The results would have been catastrophic, and you would be reading this on a message board in MIR format instead of in an *Approach* article.

Review everyday events such as start, taxi, takeoff, and break procedures. In an emergency, you should be armed with the anticipated response and not be reinventing the wheel.

Secondly, always be ready to direct your crewmate's actions in a concise manner. Directive communication from a crew member may be the only stimulus that reaches an oversaturated pilot.

Lt. Leahey flew with VF-21 and VF-154. He is now assigned to SWATSLANT.

The

R. Rausa

by Lt. Tim C. Barkdoll

THE DAY WAS MUCH LIKE any other day in Iwakuni: sweltering with the temperature and humidity racing into the 90s. Other than the normal Japanese haze layer, the weather was good at the field. In a week or so, we would be marking "hump day," the half-way point of our deployment as the first land-based expeditionary EA-6B squadron to deploy. The day's flight was expected to be routine.

We were scheduled as Garuda 81 for a low-level followed by 30 minutes of MOA time for an acrobatic and stall series to maintain aircrew currency.

The briefing was standard and in accordance with NATOPS. After completing the first leg of the low-level, we quickly realized we weren't going to be able to finish the route because of the weather. We began an easterly climb, proceeding VFR to the area, where we started the stall series as briefed.

Completing the clean approach to stall, we descended to 6,500 feet MSL to dump cabin pressurization. Following the cabin dump, we climbed back to 15,000 feet for the dirty approach to stall.

We lowered the gear and extended the flaps and slats at 250 knots. As the gear transitioned to the down-and-locked position, we heard an unfamiliar noise. The main landing gear gave good indications, but the nosegear was slow to indicate down-and-locked.

Noting the airspeed at which the nosegear finally indicated down, we continued with the dirty approach to stall without incident.

Returning the jet to normal flight, we raised the gear handle. As the gear moved, we heard a loud shearing sound. The main landing gear indicated up-and-locked, but the nosegear remained barberpoled. Secondary indications confirmed the gear was not up-and-locked. Unsure of the nosegear position, we immediately turned toward Iwakuni, 130 miles north, and started the emergency procedure checklist.

The PCL required us to check the hydraulic systems, which were indicating normal, and to make sure we didn't exceed the gear-retraction limitation of 200 KIAS.

Fortunate Garudas

As we made our way north, we relayed our situation to Iwakuni Approach and requested a short-field arrestment, an LSO, and a tow back to our line after pinning the gear. Approach vectored an FA-18 to check us over.

After joining, the Hornet pilot reported our main gear was retracted, but the nosegear was partially extended and trailing at a 30-degree angle from the fuselage. A collective "That's not good!" echoed through the ICS. Garuda 81 was 25 miles south of the field, and we decided to go dirty. The Hornet remained nearby to check the gear following extension.

As we lowered the gear handle, the gear transitioned to the down-and-locked position without hesitation. Fortunately, the nosegear did not hang up, and our Hornet wingman reported that all looked normal.

As the Hornet detached, we decided the nosegear had managed to somehow get out of sequence with the nosegear doors, making them bind against the nosewheel. Even though indications were normal, the precautionary short field arrestment was still the best option.

With LSOs on station, we made a visual, straight-in approach to runway 2 at Iwakuni. Smoothly touching down short of the arresting gear, the Prowler rolled into and engaged the short-field arresting gear. The touchdown, strut compression, rollout and braking all seemed normal. The ground crew chocked the wheels and pinned the gear. After leaving the jet and inspecting the nosewheel well, we realized we should have spent the day pursuing more lucrative games of chance.

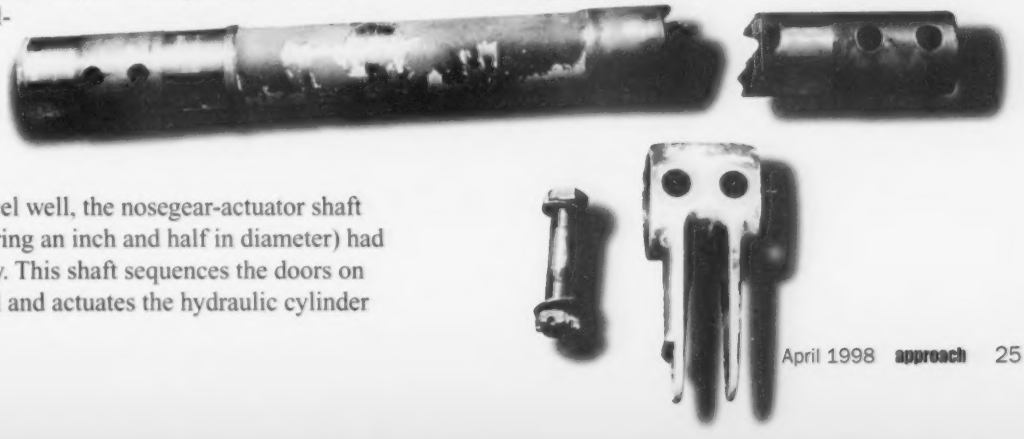
In the nosewheel well, the nosegear-actuator shaft (a steel rod measuring an inch and half in diameter) had sheared completely. This shaft sequences the doors on the nosewheel well and actuates the hydraulic cylinder that pushes the nosewheel through the air stream, past the over-center position, and into the down-and-locked position. It is the only means of pushing the nosegear down; the emergency gear blow-down relies on this shaft and its associated hydraulic lines, too.

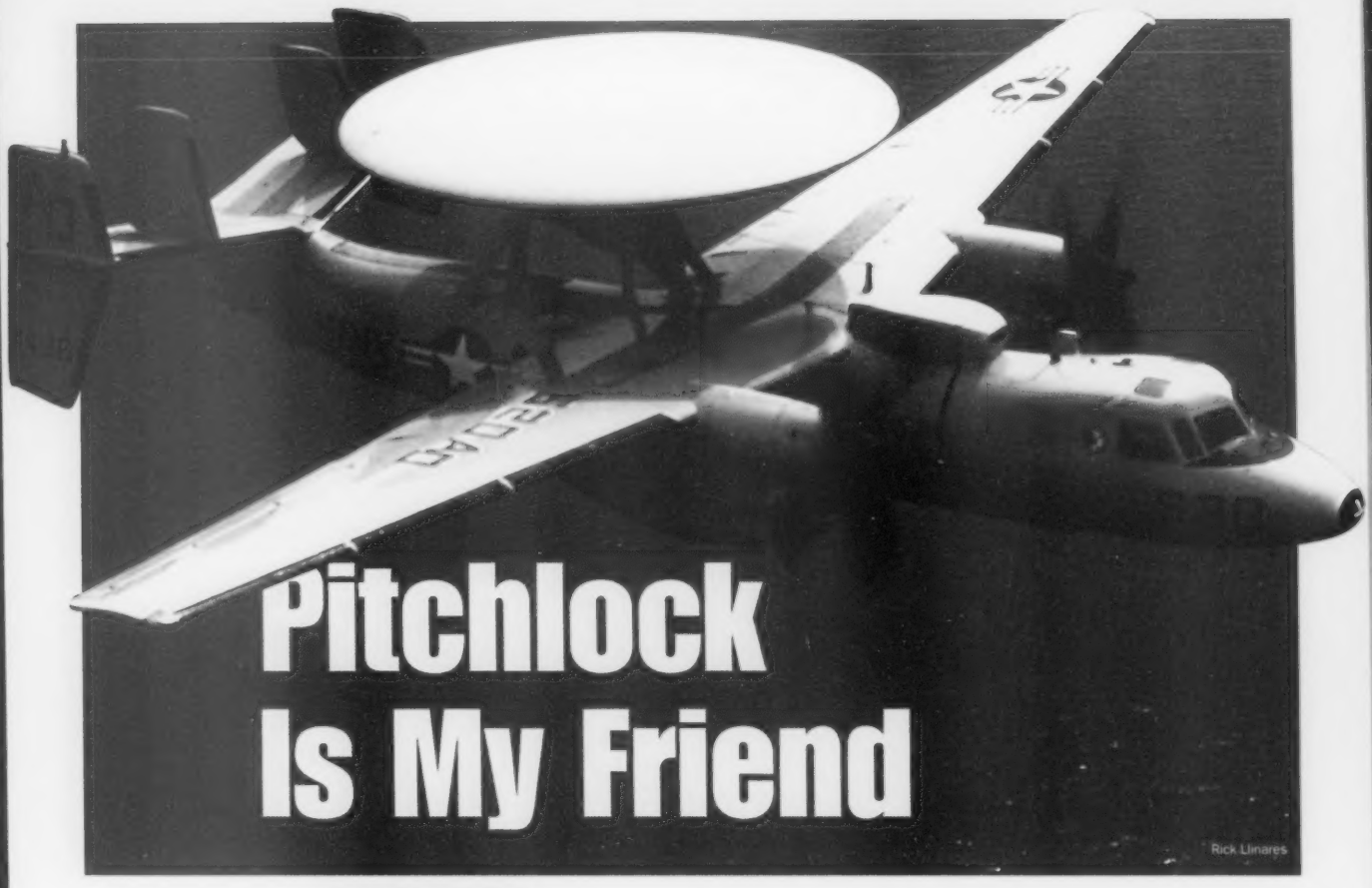
The sheared shaft had lodged itself in the side of the nosewheel well. Even though the gear had been cycled, the hydraulic-actuation lines were not severed. The hydraulic actuator pushed against the nosewheel well to extend the gear and when fully extended, the hydraulic lines were pulled taut, but did not separate from the actuator.

We were fortunate that when the shaft sheared and lodged, it still allowed full extension of the nosegear. Fortunate that after jamming the nosegear in the wheel-well with the broken shaft, we could still re-extend the gear. Fortunate that when we cycled the gear, the hydraulic-actuating lines were not torn or cut, which would have made for a more eventful landing.

Using 20-20 hindsight, after hearing the unusual noise during the first actuation and getting a good down-and-locked indication, we shouldn't have recycled the gear. We saw the delayed extension of the nosegear, but we didn't think it was an emergency or structural failure because of the good down-and-locked indications.

Lt. Barkdoll flies with VAQ-134.





Pitchlock Is My Friend

Rick Llinares

by Lt. Russell Jack

It WAS A BEAUTIFUL MORNING, and the only glitch had been a general quarters and AOM that lasted until brief time. But we did a thorough brief and even walked a little early to give the crew a chance to settle in and check out the system before launch. We were operating in the warning areas east of Jacksonville and launched for a standard E-2C double cycle.

After we finished our mission, we returned to the overhead stack for a Case I recovery. Everything was routine until we approached the initial. After the first items in the landing checks, my nugget copilot and I heard an off-speed condition from one of the engines. The instruments indicated that the left engine was out of limits at 103 percent. I did the emergency-procedure memory items by leveling off and maintaining indicated airspeed. The copilot looked for the checklist in NATOPS, while I notified tower of our problem.

We had briefed that the mission commander would serve as the single point of contact between the pilots and the crew during an emergency and assume responsibility for all communications until the pilots were finished with the checklists.

So, while we circled overhead the ship going through our checklists, the mission commander handled all coordination with the ship.

After confirming that the port engine was pitchlocked, I spoke with the E-2C rep in the tower who double-checked our procedures and recommended that we divert to NAS Jacksonville.

Our Hamilton Standard propeller features pitchlock as a safety item. The engine is designed to operate at 100 percent all the time, and governing is done through a variable-pitch propeller system. If the system that regulates prop pitch fails (as it had in our

case), the pitchlock system holds the prop-blade angle constant, allowing you to continue flying until you find someplace to land.

Since the engine has a narrow rpm range, depending on blade angle, you may not be able to slow down to landing or even approach speeds without shutting down the engine (intentionally or inadvertently). A secured engine with a pitchlocked propeller will windmill (not feather) and become a giant speed brake that creates problems with drag and controllability.

The emergency procedures for pitchlock in the E-2 are long and involved, but NAS Jacksonville was more than 100 miles away, which gave us time to go through them. Once again, good crew coordination simplified matters during our divert flight. Except for communications with approach control, All coordination with strike, Sea Lord, our tower rep, and the other airborne E-2C was handled by the mission commander, ACO, and RO. They also ensured we had ATIS for NAS Jacksonville and that the short field gear would be rigged and ready when we arrived. This gave me and my copilot time to finish the emergency procedures, brief all the NATOPS warnings, cautions and notes, and make the approach.

We had calculated our approach power to be about 5,600 SHP for the pitchlocked propeller, which required the engine to be shut down before landing. At 20 miles on a straight-in approach, I slowed the aircraft and dirtied up. The power on the pitchlocked engine started climbing as expected, and it took flight idle on the good engine to keep our descent going without exceeding our approach speed.

At 15 miles we had the field in sight and saw the St. John's River at the approach end. Since we probably wouldn't be able to wave off, and a controlled landing short of the runway was a possibility, I briefed the crew to prepare for ditching just in case.

At 6 miles, I was "well above glide path," unable to slow to landing speed. The port engine rpm was decaying below 98 percent when we shut down the engine. The aircraft immediately slowed from 160 to 120 knots, and the rate of descent increased from 400 fpm to 1,200 fpm. Adding nearly full power on the good engine only slowed the rate of descent to about 500 fpm as the pitchlocked prop continued to windmill, creating enormous drag. The extra altitude helped and we easily made the field.

Just before touchdown, I announced, "We'll be lucky to catch this one," as I noticed the arresting gear lying slack on the deck. As the aircraft hook skipped the arresting gear, we did the abort procedures as briefed and brought the plane to an easy stop using all of the remaining runway.

I briefed the crew to prepare for ditching...

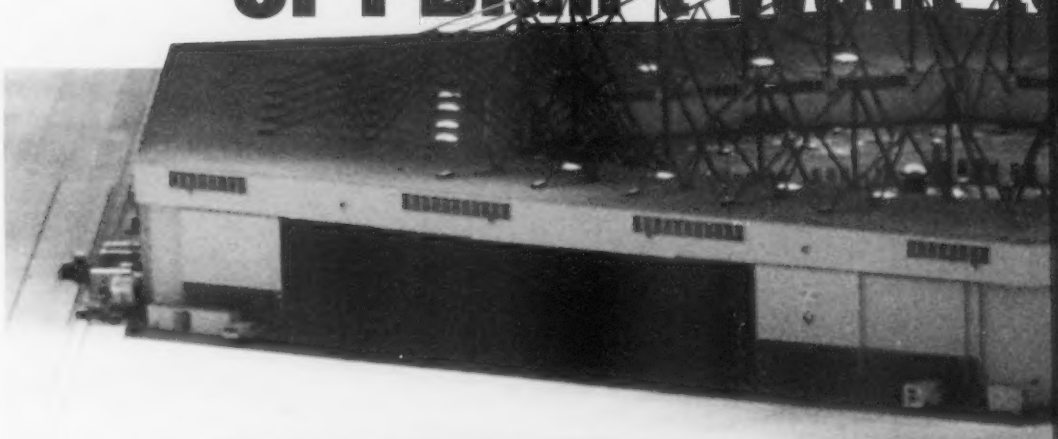
There is no mystery why things turned out so well. Aircrew coordination was the key. We briefed the communication plan in case of emergency and gave ourselves extra time to focus when outside events took time away from our preflight planning. Also, having the crew handle communications allowed the pilots to aviate and navigate. The result was a well-prepared crew ready to handle the emergency at a critical stage of flight.

One final note: if the pitchlock system had failed, the engine could have been seriously damaged, and the aircraft may have been uncontrollable—not good at 2,000 feet in an aircraft with no ejection seats.

As difficult as a pitchlock landing is, the alternative is worse. To quote the FRS instructor who taught me the prop system, "Pitchlock is your friend."

Lt. Jack flies with VAW-125.

LCdr. Knuckle
or I Didn't Want t



...he reaches for the parking brake handle, which ain't on the right side. So what does he grab?

by LCdr. R.D. Broadston

WE'VE ALL READ HAZREPS that start by describing some dumb stunt like taxiing into a maintenance stand or raising a gear handle on the deck. We always think, "Man, I'm glad I'm not that dumb." Then, we read the CO's comments, and at least eight out of 10 start with, "He was my most experienced IP." Of course, most of us pat ourselves on the back and think, "Never gonna be me. I'm not that big a knucklehead."

What we don't get to read about is the pilot's background. So, as a public service and to stop one of you from becoming a knucklehead, let's examine one particular incident.

Our hero is an O-4 department head. He's been aboard about two months and is up for his instructor-pilot check with the skipper. This guy is one of the lucky ones. He's never been out of the cockpit. He's a former FRS IP, has 2,900 hours under his belt, and has been progressing through the squadron syllabus at a good clip. You could say he knows the airplane.

His last tour was in a special projects unit, flying with the most experienced people in the community. His crew there had been together for nearly two years. Married couples should know each other as well. All that familiarity gave our friend a comfort level about flying that bordered on laziness. He knew the bubbas wouldn't let him get into trouble if he let down his guard.

IP checks are notorious sweat-generators. The skipper has to check the IP's reaction to just about every wild and crazy maneuver a student could pull. Consequently, the IP has to be on guard every second of the four-hour flight.

head's Stunt, Be an IP, Anyway

We're about three hours into this marathon nightmare. Our potential IP is in control of the situation, and the skipper asks him to demonstrate a little right-seat taxi, then an engine failure after refusal speed. Not a big deal.

Our hero keeps the plane on the taxiway and discusses the upcoming EFAR demo when he reaches the hold-short. He stops the airplane and starts to set the parking brake. Acting solely on autopilot he reaches for the parking brake handle, which ain't on the right side. So what does he grab? You guessed it—the landing gear handle.

Up comes the handle, off go the warning lights and horns, and just as quickly, down goes the handle. After the crew's eyeballs return to normal size, and everyone utters a few Anglo-Saxon expletives, the crew discusses the effects on the landing gear system and decides to finish the event. Needless to say, our hero draws a down—excuse me, a Statement of Pilot Deficiency—for his stellar effort.

Why did this happen? Why did the guy who should have known better goon such a simple task as parking an airplane? Our hero was so comfortable with himself and the airplane that he acted by reflex. As Yoda would say, "Never his mind on where he was, what he was doing."

As we come up through the syllabus, our cone of safety increases from the size of a soda straw as a 3P (sorry, PPCP), to a drinking cup as a 2P, up to a watchstander-sized coffee mug as a senior PPC or IP. Unfortunately, our friend let his cone go well past his peripheral vision. Nobody hurt, no busted airplanes, just a bruised and beaten ego. I'd say a fair price for a valuable wake-up call.

LCdr. Broadston is the safety officer for VP-46 and an IP, finally.

Comfortable W

by LCdr. Arthur Sterrett

THERE I WAS, halfway through my first fleet tour and one week into my first air-wing weapons detachment to Fallon. Just before leaving on det, our squadron had adopted a new tactical organization. Much to my chagrin, I was assigned to fly with "Dangerboy." At the time, I wasn't sure how he had earned this distinguished nickname. It wasn't his official call sign; it was a secret, no-hinge nickname

/ith Dangerboy

given to him by the senior cat 1 aircrew.

We had been flying together for a couple of weeks, and I had started to get comfortable flying with him. Maybe "comfortable" is the wrong word, but we were fine-tuning our crew coordination and things were going well. I was starting to think maybe he wasn't so dangerous after all.

It was an awesome spring day, clear and cool, and we were scheduled for a 4 v unknown on the TACTS range. The brief went well, with the XO meticulously covering every detail (with time left for a few JO counseling sessions).

Danger and I were scheduled as Dash 4. We were all in high spirits as we confidently strapped into our fighters. After a perfectly executed division takeoff, we joined up and headed toward the TACTS range. Passing through 10,000 feet MSL and on our lead's signal, we dropped back for standard F-14 weapons checks. The radar looked great and we were quite sure that today we would rule the TACTS range.

As we finished our weapons checks, Danger smartly moved back up to join on our lead. As I looked up from the radar, I noticed that we were joining a little too smartly. We had a radar lock that showed 120 knots of closure, with about a quarter mile to go.

Just as I was about to recommend an underrun, the aircraft yawed left and the

right wing popped up 20 degrees as Dangerboy cross-controlled the aircraft in an attempt to stop closure. It looked like it was going to work, but, just as suddenly, he pushed the nose over and made an underrun. I admonished myself for not being more aggressive in calling for an underrun.

"That was dumb," I thought, "but at least it's over and we can get on with our mission."

Wrong! Dangerboy abruptly pushed the nose over even more, and I started to worry. I asked what was going on but didn't get a response. After a few more seconds, he finally replied—a panicked, two-word profanity.

I thought, "He must be doing boldface for something. I just don't know what it is."

Once again, I asked what was wrong but got another profanity in reply. I knew things were bad when the normally hurricane-like interior of the F-14A became extremely quiet. That could mean only a couple of things, the worst being that both engines had quit. My fears were confirmed when Danger finally told me what was going on: "Deco, we've got no engines."

The quiet was suddenly deafening. Looking outside, I noticed that the mountainous terrain was really close. As my pilot began air-start procedures, I called out 10,500 feet MSL from the baro altimeter and 320 knots.

I was suddenly grateful for the XO's in-depth discussion of terrain during our brief. I knew the terrain was about 4,500 feet, but since the F-14A doesn't have a radar altimeter in the back seat, I was guessing.

I wanted Danger to concentrate on starting the motor and not worry about checking the radar altimeter. Passing through 8,500 feet MSL with no start yet, I looked down and grasped the ejection handle that I hadn't expected to use today. As we passed through 8,000 feet MSL, he finally called, "Good start on the right." I gratefully released the handle as the nose finally broke the horizon and we bottomed out at 7,500 feet MSL.

We breathed collective sighs of relief as he got the port engine started, too. I looked up and saw our lead out at 9 o'clock high. He had followed us down, and, even though we hadn't heard him, he'd been calling off AGL altitudes. After deciding that today wasn't our day, and with a little prodding from the XO, we returned to Fallon to debrief our near-disaster. As it turned out, we had stalled our left motor (imagine that, an F-14A with a stall) as a result of our left yaw. Dangerboy correctly analyzed the stall and subsequent overtemp, but then he accidently secured the wrong engine! With the left motor stalled and the right one shut down, we were a swing-wing glider.

My fears were confirmed when Danger finally told me what was going on: "Deco, we've got no engines."

It's amazing how quickly we turned a good deal into a fiasco. If I had aggressively called for an underrun, we would have avoided some serious buffoonery. I remembered my FRS instructors always telling the RIOs that "you're never along for the ride." Once the initial shock of our predicament wore off, we moved into some decent crew coordination and saved a valuable aircraft. But we had put ourselves into an emergency and were within a couple hundred feet of a much different outcome. Think it can't happen to you?

LCdr. Sterrett flew with VF-31. He is now an AEDO at NADEP Jacksonville.

LESSONS LEARNED

There are two ways to get smart. One is through experience – we call this "the hard way." The other is to learn through others' experiences. The second method is much easier on our machines and bodies.

Who Owns the Night?

by Capt. John Pitchford

An HH-46D crew was completing a night amphibious SAR mission, even though neither the HAC nor his copilot was current on night-vision goggles (NVGs). Returning to the ship, they had a number of things to do before landing: take off their NVGs, reconfigure the cockpit's lighting for unaided flight, complete the post-doppler checklist, go over the landing checklist, and switch radio frequencies from HDC to tower.

When they "degoggled," they had to transition to instrument flight in a demanding night environment. Getting the Sea Knight ready for landing proved too much, and crew coordination broke down. Both pilots lost their instrument scans and situational awareness. They flew their helo into the water; four aviators died.

Since 1984, NVG mishaps have accounted for 4.3 percent of all Class A flight mishaps and 14 percent of the fatalities. The 22 helicopter NVG mishaps involved 7 AH-1 Cobras, 7 H-46 Sea Knights, 4 UH-1 Hueys, 2 H-53 Sea Stallions, and 2 H-60 Seahawks. Of these, only 4 involved material failure.

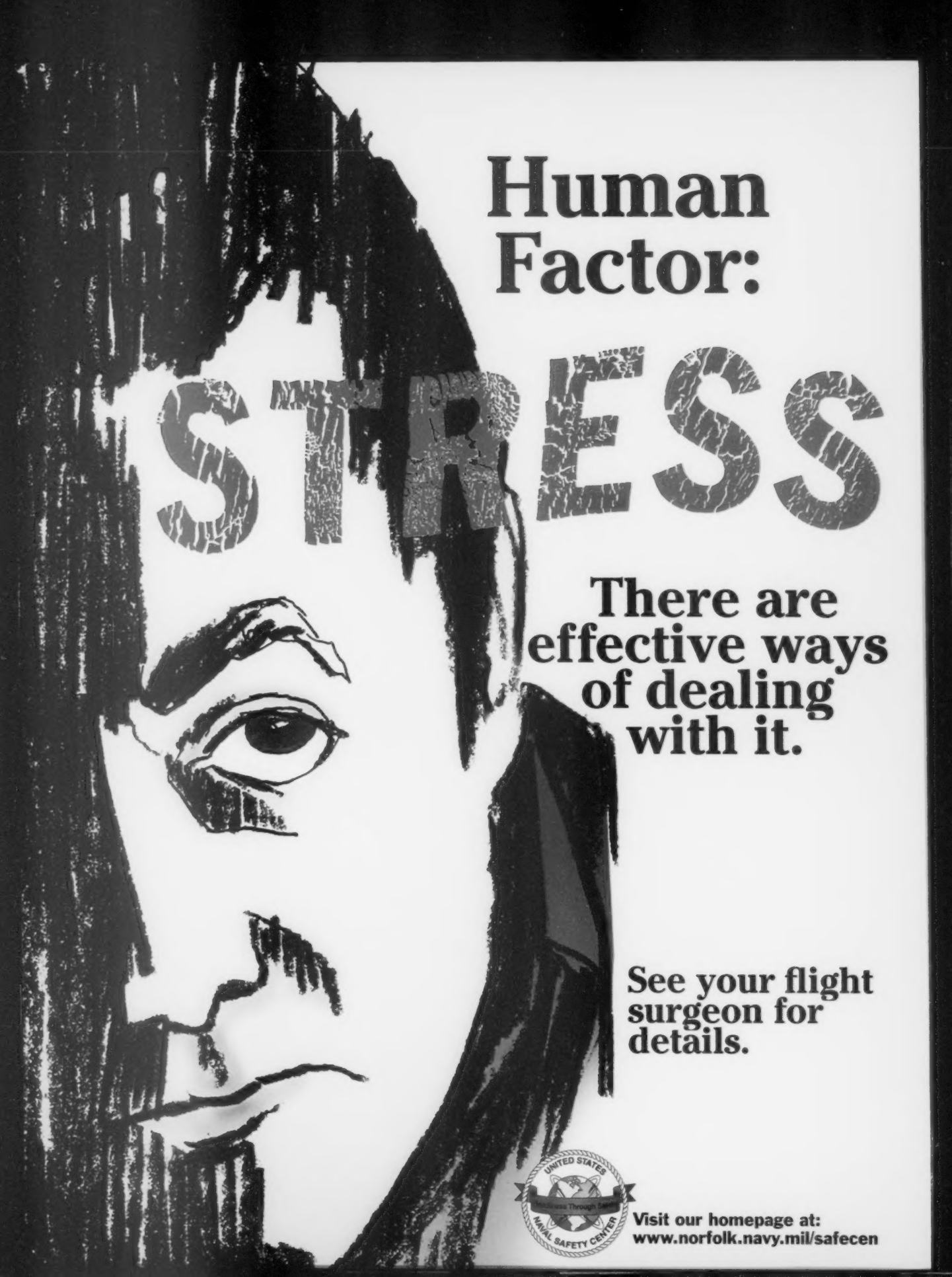
Eighty-one percent—18 incidents—of the helicopter NVG mishaps since 1984 resulted from aircrew error, supervisory error or both. Half were under HLL (high-light level) and half were under LLL (low-light level) conditions. Mishaps in low-contrast terrain, such as water or desert, totalled 61 percent, while 56 percent were controlled flight into terrain (CFIT).

Although the mishap occurred shortly before the study appeared, a 1997 analysis concluded that the next NVG mishap would involve two Marine captains flying a Cobra into the water. Each would have between 500 and 1,500 hours total flight time, and each would have less than 100 NVG hours. This profile fit the last Class A NVG mishap in July 1997 in most respects.

Lessons Learned:

1. Fatigue is frequently involved in NVG mishaps. Adequate crew rest and a reasonable crew day will help prevent many of our NVG mishaps.
2. Transition from aided to unaided flight is hazardous. Time is needed to adapt visually. A transition just before a high crew workload phase, as in landing, can make things worse. Chock-to-chock use of NVGs should be the standard when weather conditions permit.
3. When weather conditions deteriorate, however, it is often safer to degoggle and fly on instruments. Sound judgment is required to decide when enough is enough. This contingency must be discussed in the brief.
4. Procedures and policies covering all aspects of NVG use should be clearly defined and published in squadron and higher level SOPs and in NATOPS instructions.
5. Night unaided visual and instrument flight is a critical skill that must be maintained. The minimums are just that—minimums.
6. When the mission profile is repetitive, the aircrew tends to relax, allow their focus to wane, and accept lower standards. Solid crew coordination will help maintain the edge on mission safety.
7. Never assume "see and avoid" in NVG operations. "Deconfliction" plans for multi-aircraft NVG missions must be rock solid.

Capt. Pitchford is an analyst in the Naval Safety Center's Aircraft Operations Division for night vision devices and for the AH-1, UH-1, and H-57. Acknowledgement: The author would like to thank LCdr. Bill Schutt of MAWTS-1 for providing statistical analysis for this article.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